

REMARKS

The application includes claims 7-34 prior to entering this amendment.

The examiner rejects claims 31 and 34 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

The examiner objects to claims 29-30 and 32-33 as not well written so that one skilled in the art can understand easily.

The examiner rejects claims 7-34 under 35 U.S.C. § 102(e) as being anticipated by Takahashi (U.S. Patent No. 6,665,439).

The applicant amends claims 29 and 31-34.

The application remains with claims 7-34 after entering this amendment.

The applicants add no new matter and request reconsideration.

Claim Objections

The applicants amend claims 29-30 and 32-33 to clarify that which they recite.

Claim Rejections Under § 112

The examiner alleges claims 31 and 34 contain subject matter not described adequately in the specification. The applicants amend the claims to clarify that which they recite and point the examiner to, e.g., page 13, lines 8-13 of the specification for descriptive support.

Claim Rejections Under § 102

The examiner rejects claims 7-34 as old over Takahashi. The applicants traverse for the reasons that follow.

With regard to the *feature extractor* recited in claim 7 and the *populating a feature table by identifying image features in the source pixels* recited in claim 18, the examiner responds that Takahashi's edge templates can be produced during processing as well as being predetermined. Takahashi describes its edge templates as generated using predetermined number arrays. If the edge templates disclose the recited feature table as the examiner alleges, then it follows that the edge templates must be populated by identifying image features in the source pixels as recited.

But the edge templates are not so populated as should be clear to the examiner by the following partial list of Takahashi's description of its edge templates.

- Takahashi's abstract describes the edge templates as populated by "predetermined arrays of numeric values."
- Takahashi's claim 1 recites *generating corresponding edge templates as an array of respectively predetermined numeric values.*
- Takahashi's claim 16 recites *edge template application means for generating a plurality of edge templates each formed of an array of respectively predetermined numeric values, with said edge templates corresponding to respective ones of a plurality of predetermined edge directions.*
- Takahashi's column 5, lines 34-41 describes "...edge templates are utilized, with each edge template corresponding to a specific one of the predetermined edge directions, and with the values thereof predetermined such that when the color vectors of an array of pixels centered on the object pixel are subjected to array multiplication by an edge template, the edge vector corresponding to the direction of that edge template will be obtained as the vector sum of the result."

The examiner also posits that the edge templates can be produced during processing. The claims recite that which populates the edge templates (i.e., in claim 1 *by identifying image features in a pixel array*, and in claim 18 *by identifying image features in the source pixels*), and not necessarily when they are populated (i.e., predetermined or during processing). The passages indicated above, as well as other such passages in Takahashi should make clear that that its edge templates are not populated as recited, i.e., by identifying image features in a pixel or source array.

Takahashi also does not disclose a feature table populated with *a plurality of pairs of numbers, a first number in the pair defining a start position and second number in the pair*

defining an intensity for each of the image features identified as recited in claim 29 and similarly recited in claim 32. Takahashi's column 27, lines 6-12 does not disclose the recited pairs of numbers, with a first number in the pair defining a start position and a second number in the pair indicating intensity. There, Takahashi discloses a transform of the pixel values from sets of r, g, and b values of the RGB color space to h, s, and i values of the cylindrical HSI color space, which are then converted to a modified H'S'I' space. Column 26, lines 57-67.

The examiner further posits that other image features such as edge and color vectors can be read as image features for this limitation. If that is so, then it would follow that Takahashi's edge templates would be populated by identifying the edge or color vectors. But they are not. A color vector is a color attribute of a pixel expressed as a set of coordinates of an orthogonal color space. Takahashi applies an edge template including "predetermined numeric arrays" to these sets of coordinates to obtain an edge vector corresponding to a specific direction "with each edge vector obtained as the difference between weighted vector sums of respective sets of color vectors of two sets of pixels which are disposed symmetrically opposing with respect to the corresponding edge direction." Abstract.

With regard to the *feature comparator* recited in claim 1 and the *populating a match table by matching features in the feature table* recited in claim 18, the examiner disagrees. The examiner indicates that Takahashi discloses the recited match table at column 16, lines 55-67 and column 16, lines 1-10. In those passages, Takahashi describes Figures 9A-B, corresponding to "conceptual diagrams for illustrating how the edge strength of an object pixel is compared with respective edge strengths of pixel which are located adjacent thereto, on opposing sides with respect to an edge direction, for each of the possible edge directions." Brief description of the drawings. Figures 9A and 9B, therefore, are not match tables much less match tables populated by matching features in the feature table as recited, but rather conceptual diagrams of source pixels and their strengths. Note that the recited match table is populated by matching features in the feature table. If the examiner is correct that Takahashi's edge templates disclose the recited feature comparator, then it would follow that the edge templates populate that which is shown in Figures 9A and 9B. They do not.

Claims 30 and 33 add to the distinction that the feature comparator is adapted to match like features in adjacent rows or columns of the feature table. New claims 31 and 24 add the

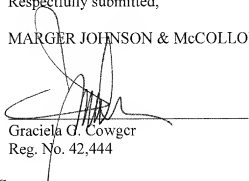
limitation that the feature comparator is adapted to populate the match table at about the same time as the feature extractor populates the feature table (see specification page 13, lines 8-13).

For the foregoing reasons, the applicants request reconsideration and allowance of all remaining claims.

The applicants ask the examiner to telephone at 503.222.3613 if he believes that other limitations or clarifications are needed to place the case in condition for allowance.

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